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Teachers' Attitudes and Self-Efficacy Towards Inclusion of Pupils With Disabilities in Tanzanian Schools

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Abstract

The purpose of this study is to investigate factors that are related to teachers' attitudes and perception of self-efficacy towards pupils with disabilities and the problems teachers experienced in the implementation of inclusive primary education in Tanzania. The study involved a sample of 100 teachers from 10 inclusive schools in Dar es Salaam. The instrument included questions/items regarding (a) background information of teacher and school characteristics and about the type of disabilities of the pupils that are included in the teacher's classroom, (b) teachers' attitudes and self-efficacy regarding pupils with disabilities in inclusive education (Likert scales) and (c) statements to measure the problems that teachers face in the implementation of inclusive education. First, the findings show that demographics like gender, class size, type of disability and training in special needs education did not relate significantly to teachers' attitudes and self-efficacy towards inclusive education. Furthermore, the results revealed that teachers face a lot of problems in the implementation of inclusive education, specifically in managing pupils with different disabilities, shortage of teaching and learning materials, lack of training and poor working environments. Multiple regression analysis showed that (a) working experience in inclusive education is significantly and positively related to attitudes towards including pupils with disabilities in mainstream education and (b) teachers with low self-efficacy face more problems with the implementation of inclusive education.

Keywords: inclusive education, teacher self-efficacy, teacher attitudes towards inclusion

1. Introduction

1.1 Definition and Justification For Inclusive Education

Inclusive education is a concept that allows students with disabilities to be placed in and receive instruction in regular classes and being taught by regular teachers (Pijl, Meijer & Hegarty, 1997). It is expected that, the interaction with students in regular education will help students with disabilities to learn more and gain different experiences from their peers. In many countries the effort to achieve a more inclusive education system has resulted in the education of pupils with disabilities in regular schools and in the decline of the number of pupils placed in separate, special schools. The organisation for economic co-operation and development (OECD, 1999) supported that, including and educating children with disabilities in regular classrooms is an important policy goal for many countries. Inclusive education is about acknowledging that all children and youth can learn together in the same classroom (Information Centre for Disability (ICD), 2006). According to Mittler (2000), the goal of inclusion in education is to restructure and reform the school in the direction so that all children can be part of all the social and educational opportunities offered in a school. Teachers need to have skills for teaching children with special disabilities in an inclusive classroom.

The role of teachers in inclusive education diverges from its traditional role. In the past it was customary for educators to identify learners who did not fit in the curriculum as early as possible with a view to referring them to someone else outside the school or to special classes or schools for special education (Du Toit, 1997). Forlin (2001) claims that, serving pupils with learning disabilities in a regular classroom requires a major shift in roles and responsibilities of educators, intervention and also special support services. In regard to that, Timperley and Robinson (2001) argued that teachers have to adapt or modify the curriculum and their teaching methods by using special teaching aids and make adjustments with regard to classroom management to support students with disabilities. Timperley and Robinson also suggested that teachers have to refine their existing skills and develop new ones to meet the challenges in inclusive classrooms, work collaboratively with team members and co-operate with parents, business or other agencies. In this respect we argued that research regarding attitudes and effective implementation of inclusive education could learn from research findings concerning teachers' self-efficacy. Bandura and Hardre (2003) and Parajes (2003) define self-efficacy as a personal belief about one's capability of performing an action and this relates to one's sense of competence and confidence about performance in a given domain. Other research shows that teacher efficacy seems also to be related to more innovative classroom practices that could strengthen the process of inclusive education (Hsiao, Chang, Tu & Chen, 2011; Pohan, 1996).

1.2 Teachers' Struggles With Inclusive Education

According to Forlin (2001) and Vaillant (2010) teachers play a vital role to assure that pupils in inclusive primary classrooms can learn regardless of their abilities, but he also acknowledges that many teachers face struggles with the process of implementing inclusive education and seem not to have skills that enable them to deal with the complexities of

inclusive primary education. Many teachers in inclusive schools lack a special education training background in inclusive education and this could result in problems in the process of implementation of inclusive primary education. Moreover, their lack in knowledge about special education needs may likely influence their behaviour towards acceptance of learners with disabilities (Subban & Sharma, 2006). Teachers, who lack knowledge, experience and training in special needs education, are likely to have problems with the inclusion of pupils with learning disabilities in their classrooms.

Most of the research regarding teachers' attitudes, self-efficacy and problems teachers face regarding inclusive education has been conducted in primary education in developed countries. Scarce studies are available in developing countries. Tanzania's distinct focus on education of students with disabilities is visible as the government adopted inclusive primary education in 1997 with the goal that at least each category of disability should be provided with education at the primary level (United Republic of Tanzania [URT], 2001). Inclusive education has been practiced in Tanzania with the purpose of ensuring increased access and equality in education by marginalized children, including those with disabilities in regular classroom (Flavell, 2001). Studies conducted on inclusive education in Tanzania reported themes like enrolment, teaching and learning for pupils with disabilities and attitudes of teachers towards these types of pupils (e.g. Oslon, 2003; Yosiah, 2005; Pembe, 2009). However, as these studies have not been focused on teachers' attitudes and self-efficacy towards inclusion of pupils with disabilities in mainstream education, our study will try to fill the gap.

Investigation of the "process" of inclusive education in developed and developing countries is important, and provides valuable insight into a process that takes place in many different educational settings around the world. Moreover, research focusing on teachers' attitudes and self-efficacy and towards inclusive education in general and in Tanzania in particular is of interest to get in-depth information on the perspective of teachers on inclusive education. Moreover, our research looks for measures and tools to solve problems faced by teachers in the implementation of inclusive education in Tanzania.

1.3 Research Questions

- 1) What are the attitudes and self-efficacy of Tanzanian primary school teachers to inclusive education?
- 2) Do demographic factors such as gender, age, class size, type of disabilities, educational training background and working experiences influence teachers' attitudes and self-efficacy towards inclusive primary education?
- 3) What problems do primary school teachers face in the implementation of inclusive education?
- 4) What are the main contributors to teachers' attitudes, self-efficacy and problems with the implementation of inclusion of pupils with disabilities in regular primary education?

The context of this research, Tanzania, provides and insight on the development and

perception of inclusive education in developing countries compared with the developed, especially to compare problems of professional development opportunities for teachers. Throughout, the priority goal in Tanzania education policy, like in many developing African countries, has been to ensure that *all* children have access to quality education, in the first instance basic education. To ensure this goal, Tanzania has established different kinds of primary schools like primary schools for normal pupils, special primary schools for pupils with different disabilities and inclusive primary schools which include both pupils with and without disabilities. In line with these policies Tanzanian government focused on implementation of inclusive education from 1997 onwards and this resulted by 2013 in 21 special primary schools and 377 inclusive primary schools (URT, 2013). In 2011, only 0.35 percent of all children enrolled in primary school were children with disabilities. In secondary schools, 0.3 percent of boys and 0.25 percent of girls have disabilities. These percentages are extremely low when compared with the estimated 7.8 percent of the population with disabilities in Tanzania and indicates that most children with impairment are not enrolled. Moreover, a Unicef report (2011) makes clear that there is no functioning national system for the identification and assessment of children with physical or mental impairments, and no coherent data to track or respond to their needs. For those Tanzanian children with disabilities who do enroll in schools, regular attendance is often extremely difficult. In comparison to more developed countries education in Tanzania (as for many African developing countries) faces additional challenges like the rapid expansion in enrolment that has led to classroom sizes with an average of 66 pupils in each government primary school classroom in 2011 (Unicef, 2011). In some regions (Mwanza region) schools include an average 89 pupils per classroom, while in some classrooms there can be as many as 200 children, particularly at the lower primary school grade levels. As there has not been a corresponding increase in the number of trained teachers the pupil : qualified teacher ratio stands at 49:1. Most Tanzanian schools also face extreme shortages in textbooks, desks, chairs, toilets, water supply, and hand-washing facilities. In sum, fewer than 5% of the Tanzanian children with disabilities go to school and those who are schooled are often educated in inaccessible school buildings with a lack of (disability-educated) teachers and of suitable teaching materials.

2. Benefits of Teachers' Self-Efficacy to Inclusive Education

Teacher's self-efficacy has not only been identified as a stable and vital indicator of teacher motivation, but also as a predictor of teacher receptivity to innovative strategies, and both concepts relate to student motivation and student success (Bandura & Hardre, 2003; Hsiao et al., 2011; Pohan, 1996). Moreover, Bandura (1997) found that teachers with a high sense of efficacy usually set challenging goals, maintain confident and motivated in face of demanding educational tasks and are more able to cope with stressors and negative feelings. Hence, teachers scoring high on self-efficacy are highly motivated and confident in their classroom practice and they are more able to cope with stressors and negative feelings. Self-efficacy in general is concerned with people's beliefs in their ability to influence events that affect their lives. This core belief is the foundation of human motivation, performance accomplishments, and emotional well-being. The self-efficacy of teachers is associated with various aspects of students' educational life and career like enhanced student's motivation,

increased self-esteem, strong self-direction, ease in managing school transition and more positive attitudes toward school (Bandura & Hardre, 2003; Parajes, 2003; Roeser, Arbretton, & Anderman, 1993). Teacher's self-efficacy may also contribute to promote student's own sense of efficacy, foster their involvement in class activities and their efforts in facing difficulties in their educational career (Ross, Hogaboam-Gray, & Hannay, 2001).

Moreover, there is evidence of a positive relationship between teacher self-efficacy and attitudes toward inclusive education (Meijer & Foster 1988; Soodak, Podell & Lehman, 1998; Weisel & Dror 2006). According to Oswald (2007) teachers are at the forefront of the transformation of schools to become more inclusive and in order for teachers to lead reform efforts they need to be offered expanded and enriched professional development opportunities. It has been believed that, teachers with high self-efficacy beliefs are more likely than teachers with low sense of self-efficacy to implement didactic innovations in the classroom, to use classroom management approaches and adequate teaching methods (Chacon, 2005; Korevaar, 1990). The authors continue to argue that those didactic innovations could encourage students' autonomy and reduce custodial control, and teachers to take responsibility for students with disabilities to manage classroom problems and to keep students on task. These findings show that teachers' self-efficacy is of major importance for both social functioning and academic achievement of pupils and it also can foster the development of inclusive education.

3. Teachers' Attitudes Towards Inclusive Education

One prominent strand of research on teachers' value systems is the study of teachers' attitudes towards inclusive education. Attitudes are usually seen as relatively stable constructs. Teachers' attitudes towards inclusion are often not based on ideological arguments, but rather on practical concerns about how inclusive education can be implemented (Burke & Sutherland, 2004). Avramidis and Norwich (2002) show that teachers attitudes towards inclusion are very important variables in the implementation of successful inclusive education practices. Moreover, Jerlinder, Danermark and Gill (2010) propose that, if teachers perceive inclusive education positively, the goals of inclusive education (all pupils being part of all the social and educational opportunities offered in a school) could be fulfilled. However, if they perceive inclusive education negatively, it will create gaps between them and the students especially those with disabilities (Koster, Pijl, Nakken & Van Houten, 2010). According to Avramidis and Kalyva (2007) most teachers believe that if they have enough knowledge and skills concerning inclusive education that will help them to handle the teaching difficulties and challenges they face in a more fitting way.

3.1 Factors Influencing Teachers' Attitudes Towards Inclusive Education

Teachers' attitude to inclusive education is influenced by the problem they face while implementing inclusive education. Among the problems mentioned are: lack of training, shortage of teaching and learning materials, large number of pupils in classes, large number of periods per teacher, shortage of time per period, poor governmental and parents support, poor working environment and difficulties in supporting pupils with different disabilities especially in primary schools (Rakap & Kaczmarek, 2010). Three types of factors influencing teachers' attitudes towards inclusive education seem to be of major importance.

3.1.1 Level of Education, Training and Experience

Level of education, training and experience in the field of inclusive education seems to have a positive connection to attitudes of teachers towards the inclusion of students with disabilities in their classrooms. Avramidis et al, (2000), Avramidis and Kalyva (2007), Avramis and Norwich (as cited by Leroy and Simpson, 1996) and Villa, Thousand, Meyers and Nevin, (1996) found that, teachers who had substantial experience with teaching children with disabilities had more positive attitudes towards inclusion than their colleagues with less experience (Makinen, 2013). The results of the studies investigating influences of a specific education training background on teachers' attitudes towards inclusion demonstrated that, level of training is an important factor in the formation of more positive teacher attitudes towards inclusion and newly qualified teachers may realize that they are not adequately prepared which may increase attrition rates among teachers (Makinen, 2013). Moreover, Avramidis and Norwich (2002) and Avramidis et al, (2000) concluded that teachers with training in special needs education themselves are confident enough to include students with disabilities in their classroom and appeared to hold more positive attitudes towards inclusive education in general. According to Meijer et al (1994) appropriate in-service training is a key ingredient in the process of inclusive education that can speed up developments, help to keep teachers on track. Sanger and Osguthorpe (2011) found that teacher preparation programs have a largely unrealized potential to contribute to improving teachers capacity to implement inclusive education. Teachers in inclusive schools need specific workshops that will make them become more used to work with children with disabilities in their classroom. Avramidis, Bayliss and Burden (2000) and Scruggs and Mastropieri's (1996) found that, while teachers agreed with the general concept of inclusion and regarded it as an ideal to be striven after, the majority of them felt that they lacked sufficient skills and training, were hampered by time constraints, and had not sufficient resources available to make inclusion work in practice.

3.1.2 Type of Disabilities

Inclusive education means that all students attend and are welcomed by schools in age-appropriate, regular classes and are supported to learn, contribute and participate in all aspects of the life of the school. Inclusive education is about how we develop and design our schools, classrooms, programs and activities so that all students learn and participate together

Inclusive schools welcomes children with various disabilities being mild or severe, hidden or obvious. Research shows that the degree and severity of the disabilities that children have are major factors that influence teachers' attitudes towards inclusion (Avramidis & Norwich 2002). Some research studies shows that teachers have a tendency to favour certain kind of disabilities. In general, studies demonstrated that children with emotional and behavioral disabilities are deemed to be particularly problematic for inclusion in mainstream educational settings (Avramidis et al, 2000, Clough & Lindsay, 1991; Dickens-Smith, 1995). Furthermore, Avramidis et al (2000) concluded that pupils with emotional and behavioural difficulties are seen as triggering significantly more problems for teachers than pupils with other types of disability. Rapak and Kazcmarek (2010) reported about teachers who claimed that it becomes hard for them to control classroom behaviour when students with different types of

disabilities are included in their classroom, especially the ones with multiple disabilities and behavioural problems.

3.1.3 Materials and Support

Avramidis and Norwich (2002) examined studies to determine the environmental factors that were associated with teachers' attitudes towards inclusion. The authors reported that the availability of support services (e.g., specific teaching methods and learning materials for students with different kind of disabilities) for teachers in their classrooms and schools was consistently associated with positive teacher's attitudes toward inclusion across studies (Clough & Lindsay 1991; Janney, Snell, Beers & Raynes 1995; LeRoy & Simpson 1996). The provision of fitting teaching materials and other supporting services for teachers seem to stimulate to develop more positive attitudes towards inclusion of students with disabilities.

Teachers in inclusive schools need support from parents, head of schools, different educational stakeholders and the government. Fullan et al (1990) suggested that, if teachers, both those in special education and regular classrooms, could be encouraged and supported in the endeavour to become more reflective concerning their own practice and more knowledgeable with regard to successful teaching techniques and modification of programmes, the needs of many more different types of students can be met within regular classrooms. For inclusive education to be successful, time is needed on the part of the teacher for discussion with other teachers (reflection both within the school and outside) and with parents, as well as sufficient time for the planning of lessons and the preparation of materials (Pijl et al, 1997).

In summary, our review of literature showed that most of the research regarding teachers' attitudes and self-efficacy regarding inclusive education has been conducted in developed countries, Only a scarce number of studies focus on developing countries and almost no such studies have been conducted in Tanzania. Therefore, this study is necessary to get more insight in the specific situation of teachers' attitudes and self-efficacy regarding including students with disabilities in mainstream education and the problems teachers face regarding the implementation of inclusive education in Tanzanian primary schools.

4. Method

The aim of this study is to examine teachers' attitudes and self-efficacy regarding inclusive education and the type of problems that teachers' experience in the implementation of inclusive education in Tanzania.

4.1 *Sample of the Study*

Tanzania has different kinds of primary schools such as primary schools for normal pupils, special primary schools for pupils with different disabilities and inclusive primary schools which include both pupils with and without disabilities. The sample started out as purposive to include 10 (of the total of 377) inclusive primary schools from two municipalities from the Dar es Salaam region in Tanzania. Our goal was to get specific information about teachers' self-efficacy and attitudes towards pupils with disabilities in that type of school, next to the

type of problems that teachers' face in the implementation of inclusive education in Tanzania. An personal introduction of the research was presented at each schools (for teachers and principals). From each school 10 (randomly selected) teachers were asked to participate in our study. The researcher handed the questionnaires over personally after school and waited for the 10 teachers of each primary school to fill them out. All 100 distributed questionnaires were likewise collected and were complete (response rate of 100%). Note that by 2013 Tanzania includes 377 of such inclusive primary schools (URT, 2013). However, the percentage of all children with disabilities that are enrolled in primary school in 2011 was 0.35. These percentages are quite low when compared with the estimated 7.8 percent of the population with disabilities in Tanzania and indicates that most children with impairment are not enrolled in schools.

4.2 Demographic Information of the Sample

The sample of the study shows that about 85% of the participants are female teachers. This reflects the general distribution of male versus female teachers for most of the primary schools in Tanzania. The majority of the teachers are at the age between 25 and 54 years with a mean of 40 years ($SD=9.34$). This study also reflected that the majority of teachers (64%) are in the teaching profession less than 19 years with a mean of 17 years ($SD=10.28$).

Table 1. Demographic information (n=100)

Demographic variable	Category	Percentage
Level of education	Certificate	81
	Diploma	12
	Degree	6
	Masters	1
Level of education for Special Needs Education	Untrained	63
	Attending seminar	27
	Certificate	9
	Diploma	1
Teaching experience for pupils with disabilities	>1 year	38
	2-5	35
	6-9	23
	10-15	4

Information of the sample regarding the size of classes shows a mean of 107 pupils in the classroom, while 49% of the teachers include between 56-115 pupils in their Tanzanian classroom.

Information about education level, educational background that focused on pupils with disabilities, experience of teachers with teaching pupils with disabilities are presented in table 1. It shows that the majority of teachers (81%) is trained at the level of teachers' certificate. Furthermore, 63% of teachers are not specifically trained in special needs education at all. It

is also worth to mention that a third of the teachers have a teaching experience with pupils with disabilities for a period of less than 1 year. Regarding type of disabilities more than half of teachers classrooms include pupils with mental retardation, more than third pupils with physical disabilities and almost no pupils with hearing and visual impairment. This can be explained because in the Tanzanian education system pupils with visual and hearing impairments are most often included in special education schools.

4.3 Instrument

Based on findings from the literature review this study developed a questionnaire which consisted of three sections with a total of 50 questions. Section A the questions focused on background information of the teacher like age, teaching experience with pupils with disabilities, and school characteristics like class size, level of education training in general and in particular focusing on special needs education. Finally section A also asked about the type of disabilities of the pupils that are included in the teacher's classroom (such as vision or hearing impairments, physical disabilities, mental retardation or behavioral problems).

Section B was adapted from Ngonyani (2011), Tschannen-Moran, Woolfolk Hoy, & Hoy (1998) and Larrivee and Cook (1979) and included 30 items to measure teachers' self-efficacy (10 items) and teachers' attitudes (20 items) regarding pupils with disabilities in inclusive classrooms. Reliabilities (Cronbach's alpha) of the original scales were .71 for the self-efficacy and .61 for the attitudes scale. Teachers were asked to rate their level of self-efficacy and attitudes on a Likert scale ranging from (1) Strongly Disagree to (5) Strongly Agree. Examples of self-efficacy items are "I belief that I can teach well every child including those with disabilities" and "I think that teaching pupils with disabilities is better done by resource-room or special teachers than by regular teachers". Examples of the attitude scale are "Many of the things which I do with regular pupils in regular classrooms are also appropriate for pupils with disabilities" and "If a pupil with disability in my classroom doesn't learn well, I give up because I don't have time to give him/her additional instruction".

Section C consisted of ten statements to measure the problems that teachers face in the implementation of inclusive education. In this section, teachers were asked to rate the problems on a 5 points Likert scale like in section B. Examples of the items from this section are "Lack of training", "Shortage of teaching and learning materials" and "Severity of the disability".

4.4 Data Analysis

First, reliability analysis (Cronbach's alpha) was conducted for the constructed scales. Next to that, *t*-test was used to compare the attitudes of male and female teachers; correlational analysis was employed to examine the relationship between teachers' attitude and teachers' self-efficacy with age of teachers, working experience, class size and type of disability. ANOVA was conducted for the relationship of teachers' attitudes and self-efficacy with educational background, level of training, and types of disabilities in their classroom. Finally,

multiple regression analysis was used to establish which variables are found to be (the most important) predictors of teachers' self-efficacy, teachers' attitudes and teachers' problems.

5. Results

5.1 Teachers' Attitudes and Self-Efficacy Regarding Inclusive Education

The psychometric characteristics of the three constructed scales teachers' attitudes, self-efficacy and problems faced by teachers are presented in Table 2.

Table 2. Cronbach's Alpha of Scales Teachers' Attitudes, Self-efficacy and Problems (range 1-5, n=100)

Scale	No. of items	Cronbach's α	Mean	(SD)
Teachers' self-efficacy	10	0.71	3.2	(1.17)
Teachers' attitudes	20	0.65	2.7	(1.10)
Teachers' problems	10	0.76	4.1	(1.04)

Cronbach's alpha for the scales problems faced by teachers and teachers' self-efficacy are satisfactory, while the alpha for teacher's attitudes is somewhat lower.

Taking the scale mean and range (1 to 5) into account it can be concluded that teachers' self-efficacy can be described as moderate. Teachers' attitudes towards pupils with disabilities in mainstream education scores below the mean of the scale indicating that Tanzanian teachers have a more negative than positive attitude towards inclusive education.

5.2 Teachers' Self-Efficacy/Attitudes and Demographic Factors

Teachers' self-efficacy and attitudes scores for males and females were compared using *t*-test. The relationship between teachers' self-efficacy and gender was not significant, $t(98)=-.21$, $p = .84$, nor for the relationship between teachers' attitudes and gender, $t(98)=-.65$, $p=.53$.

Table 3. Pearson correlation coefficients of teachers' self-efficacy and attitudes according to age, working experience, class size and number of pupils with disabilities

	Teachers' attitudes	Age	Working experience	Class size	No. of pupils with disabilities
Teachers' self-efficacy	.52**	.09	-.06	-.11	-.13
Teachers' attitudes	1	.26**	.23*	.10	-.01
Age		1	.50**	.05	-.12
Working experience			1	.12	.18
Class size				1	.17

Note: * $p<.05$, ** $p<.01$.

Correlational analysis of the relationship between teachers' self-efficacy and attitudes of teachers and age, working experience, class size and type of disability are presented in Table 3. The findings reveal a significant strong positive relationship between teachers' self-efficacy and teachers' attitudes and – as to be expected – between teachers' age and working experience. Significant, but low correlations were found for the relationship between teachers' attitudes with age and working experience.

ANOVA showed no significant relationship between teachers' attitudes and self-efficacy and their level of training in special needs education, respectively $F(4,95)=1.63$, $p=.17$ and $F(4,95)=.89$, $p=.48$ respectively. Moreover, no significant relationship showed for teachers' attitudes and self-efficacy according to the type of disability respectively, $F(3,86)=.76$, $p=.52$ and $F(3,86)=2.33$, $p=.08$.

5.3 Problems Faced by Teachers in the Implementation of Inclusive Education

Teachers were asked to indicate to what degree they experienced problems in the implementation of inclusive education. The overall scale mean score of problems faced by teachers is 4.1, which is high (within a range of 1-5). The highest scores are for a) difficult in managing pupils with different disabilities in the classroom, b) shortage of teaching and learning materials c) lack of training and d) poor working environment (see table 4).

Table 4. Problems faced by teachers in inclusive schools (Range 1-5, N=100)

Problems faced:	Mean	(SD)
Difficulties in managing pupils with different disabilities	4.61	(.67)
Shortage of teaching and learning materials	4.48	(.67)
Lack of training	4.47	(.63)
Poor working environment	4.46	(.81)
Poor government support	4.14	(.96)
Large number of pupils in the classes	4.14	(1.09)
Large number of periods per teacher	3.91	(1.11)
Poor parents' support	3.88	(1.09)
Shortage of time per period	3.65	(1.23)
Severity of disability	3.42	(1.29)
Total mean scores	4.12	(1.04)

5.4 Main Predictors of Teachers' Self-Efficacy, Attitudes and Perceived Problems

To find the main predictors of teachers' self-efficacy, attitudes and problems faced regarding inclusion of pupils with disabilities, three multiple regressions were conducted. The modelling strategy includes as the first step the control variables that were significant in earlier analyses in, and after that the scales for attitudes, self-efficacy and problems are included in the second step.

The *first* multiple regression with *self-efficacy* as dependent variable showed that teachers'

self-efficacy scores can be predicted by teachers' attitudes and problems faced by teachers, but not by teachers' age and working experience in inclusive education.. Positive attitudes of teachers towards pupils with disabilities moderately predict ($\beta = .47$) teachers' self-efficacy. As expected, teachers that experienced many problems with the implementation of inclusive education also show less self-efficacy towards pupils with disabilities. This model explains 39% of variance of teachers' self-efficacy scores. Details are shown in table 5.

The *second* multiple regression analysis revealed that teacher' *attitudes* can be predicted by working experience and teachers' self-efficacy. This model explain 36% of variance of teachers' attitudes scores with the strongest predictor being teachers' self-efficacy ($\beta = .49$). Interestingly, the problems teachers' experiences are not a predictor of teachers' attitudes towards inclusive education, as it was for teachers' self-efficacy. Moreover, teachers' working experience in inclusive education is significantly related to teachers' attitudes towards pupils with disabilities ($\beta = .22$), which was not the case in the regression results of the first model.

The *third* multiple regression analysis (see Table 5) revealed that teachers' *problems* can be predicted only by teachers' self-efficacy showing a moderate and negative relationship ($\beta = -.39$). No control variable (age, working experience in training background in special education needs) was found to have predictive power in the model. However, this model explains only 21% of variance in problems faced by teachers in the implementation of inclusive education scores.

Table 5. Regression model predicting teachers' self-efficacy from teachers' age, working experience, attitudes and problems

<i>Model 1</i> <i>Self-efficacy</i>	B	SE B	β	t	p	95% confidence interval for B	
						Lower bound	Upper bound
Constant	1.94	.61		3.18	.00	.73	3.15
Age	.00	.01	.05	.51	.61	-.01	.02
Work exp.	-.02	.01	-.15	-1.58	.12	-.05	.01
Attitudes	.73	.13	.47	5.41	.00	.46	.99
Problems	-.34	.09	-.29	-3.50	.00	-.53	-.15
<i>Model 2</i> <i>Attitudes</i>	B	SE B	β	t	p	95% confidence interval for B	
						Lower bound	Upper bound
Constant	1.78	.39		4.57	.00	1.00	2.55

Age	.00	.00	.10	1.08	.29	.00	.01
Working experience	.02	.01	.22	2.29	.02	.00	.04
Teachers' self-efficacy	.33	.06	.49	5.41	.00	.21	.44
Teachers' problems	-.05	.07	-.07	-.70	.49	-.18	.09
<i>Model 3</i> <i>Problems faced</i>	B	SE B	β	t	p	95% confidence interval for B	
						Lower bound	Upper bound
Constant	5.15	.37		13.77	.00	4.41	5.89
Age	.00	.01	.00	.02	.98	-.01	.01
Working experience	.01	.01	.15	1.36	.18	-.01	.04
Teachers' self-efficacy	-.34	.09	-.39	-3.50	.00	-.53	-.15
Teacher's attitudes	-.11	.15	-.08	-.70	.49	-.42	.19

6. Conclusion and Discussion

The aim of inclusion in education is to restructure and reform the school in the direction so that all children can be part of all the social and educational opportunities offered in a school (Mittler, 2000). Inclusive education has been practiced in Tanzania since 1997 and the present study is one of the first conducted in Tanzania concerning teachers' attitudes and self-efficacy towards, and the problems faced by Tanzanian teachers in inclusive primary education. Based on the findings of our study we found four considerations that are of importance to relate to and discuss with respect to other findings and research.

6.1 Teachers' Self-Efficacy and Attitudes Towards Pupils With Disabilities

Our results show that a majority of Tanzanian teachers believed themselves to be able to teach pupils with disabilities in inclusive classrooms. This is of interest because other studies showed that teacher's self-efficacy is associated with student-related factors like enhanced student's motivation, increased self-esteem, strong self-direction ease in managing school transitions and more positive attitudes toward school. Moreover, teacher's self-efficacy has been found to also promote student's sense of efficacy, fostering students' involvement in class activities and their efforts in facing difficulties (Ross, Hogaboam-Gray, & Hannay, 2001). These findings make clear how important teachers' self-efficacy is especially for teachers in inclusive education. Next to that, however, our findings indicate that Tanzanian teachers have a more negative than positive attitude towards pupils with disabilities in

inclusive classroom. This finding is in line with studies conducted in developed countries (Batsiou, Bebetos, Panteli & Antoniou, 2008) and a recent review of 26 studies that showed that the majority of teachers hold neutral or negative attitudes towards the inclusion of pupils with disabilities in regular primary education (de Boer, Pijl, & Minnaert, 2011). Interestingly, Malinen et al. (2013) focus on the importance of efficacy for collaboration as a relatively strong predictor of strong positive attitudes towards inclusive education. The Scottish study of MacFarlane and Marks Woolfson (2013) suggest that school principals should have a central role in promoting an inclusive ethos within their schools; whether this could also be of interest in the case in Tanzania needs to be investigated.

6.2 Teachers' Self-Efficacy and Attitudes and Background Characteristics

No significant differences were found between females and males with respect to teachers' self-efficacy or teachers' attitudes towards pupils with disabilities in inclusive education. Furthermore, teachers' self-efficacy revealed to be strongly correlated with teachers' attitudes towards pupils with disability. This indicates that, the more teachers believe they are able to manage pupils with disabilities in the classrooms, the more positive their attitudes towards such pupils. Other researchers (e.g. Weisel & Dror, 2006) came to the same conclusion. Furthermore, our results showed no relationship of teachers' self-efficacy towards pupils with disabilities according to age, working experience in inclusive education, class size and number of pupils with disabilities. However, this was not the case for attitudes of teachers. Our results indicated that older teachers' had more positive attitudes towards pupils with disabilities than younger teachers, which could also indicate that the working experience of Tanzanian teachers lead to more positive attitudes towards pupils with disabilities in inclusive education. This finding aligns with other studies in developed countries (e.g. Avramidis et al, 2000; Avramidis & Kalyva, 2007. No significant relationships were found between teachers' attitudes towards pupils with disabilities and class size and number of pupils with disabilities. This finding is affirmed by the findings of a study in Lesotho that revealed that large class sizes tend to take a toll on the social and intellectual growth of students with and without disabilities (Johnstone & Chapman, 2009).

Further, the training level of teachers in special needs education background did not significantly affect neither teachers' self-efficacy nor teachers' attitudes towards pupils with disabilities in inclusive classrooms. This finding is not in line with other studies in developed countries (e.g. Avramidis & Norwich, 2002; MacFarlane & Marks Woolfson, 2013; Malinen et al., 2013) maybe because there was not much variation in the experience level of our sample; most of the Tanzanian teachers did not hold a certificate or diploma in special needs education training. Malinen et al. (2013) came to the same conclusion regarding South Africa and stated that since most teachers are not adequately trained, the ability to understand their roles and responsibilities in an inclusive school poses a key challenge to the implementation of inclusive education. Research in more developed countries includes teachers that are specifically trained to work with pupils with disabilities.

Our results showed no significant relationship between teachers' self-efficacy and attitudes according to the different types of disability. However, this finding should be understood

within the context of schools in developing African countries in which inclusive education must be realized within overcrowded and under-resourced schools, that often lack basic necessities such as water and electricity (see also Malinen et al., 2013).

6.3 Main predictors of Teachers' Self-Efficacy, Attitudes and Problems Experienced

Three models of regression analyses were conducted and these models showed that teachers' self-efficacy level can be predicted by teachers' attitudes towards inclusive education and the problems teachers experienced while implementing inclusive education. Moreover, teachers' attitudes to inclusive education are foremost predicted by teachers' self-efficacy and work experience. This finding is in line with other studies in more developed countries (e.g. Soodak, Podell & Lehman, 1998; Weisel & Dror 2006). This is an interesting finding because self-efficacy is also. Moreover, Chacon (2005) reported that teachers with high self-efficacy are more likely to a) use adequate teaching methods that encourage autonomy for students with disabilities b) use adequate classroom management and can manage classroom problems, (c) implement didactic innovations in their classroom and (d) keep all their students on task. Age of teachers, nor working experience were found to be predictors of teachers' self-efficacy.

The second analysis revealed that the strongest positive contributor to teacher' self-efficacy is teachers' attitudes towards inclusive education. Moreover, working experience was found to be a weak, but positive predictor of teachers' self-efficacy. Interestingly, the problems that teachers experienced while implementing inclusive education do not relate to teachers' self-efficacy.

Moreover, our results showed that, teachers' attitudes towards inclusive education can be predicted by teachers' working experience in inclusive education. This indicates that the more years that teacher have been in inclusive education, the more positive the attitudes teachers have towards pupils with disabilities in mainstream education. Everington, Steven, and Winters (1999) who conducted research in USA also found that teachers who had previous experience with inclusive education were significantly more positive towards pupils with disabilities than those with less experience. Malinen et al (2013) found that – comparing three countries - China, Finland and South Africa – in all countries, experience in teaching students with disabilities was the strongest predictor of teacher self-efficacy, while the predictive power of other variables differed from country to country.

The third multiple regression analysis revealed that the problems teachers experience while implementing inclusive education is predicted by teachers' self-efficacy showing a moderate, negative relationship.

6.4 Problems Faced by Teachers in Inclusive Education

Regarding the problems faced by Tanzanian teachers in the implementation of inclusive education, we found that almost all teachers experienced all of the listed problems within their classroom. The four major problems teachers faced are: a) difficulties in managing pupils with different disabilities in their classroom, b) shortage of teaching and learning materials c) lack of specific training and d) poor working environment. Similar problems were found by Avramidis, Bayliss and Burden (2000) and Scruggs and Mastropieri's (1996)

in developed countries. They found that, while teachers agreed with the general concept of inclusion and regarded it as an ideal to be striven after, the majority of them felt that they were hampered by time constraints, that they lacked sufficient skills and training and lacked sufficient resources to make inclusion work in practice.

The more the problems experienced by teachers in the implementation of inclusive education the lower their self-efficacy towards pupils with disabilities. Check of make link met regression This implies that problems faced by teachers can demoralize their implementation of inclusive education. Bornman and Donohue (2013) and Oswald (2007) insisted that teachers are at the forefront of the transformation of schools to become more inclusive and they need to be offered expanded and enriched professional development opportunities in order to reduce implementation problems can be reduced. For the same reason Pijl et al (1997) suggested that it is necessary to change the regular curriculum, to train all teachers (not only those in inclusive education), to redistribute funds and to organize support services. This will help teachers to gain their confidence regarding teaching in inclusive classrooms, hence, it is expected that a higher self-efficacy of teachers will follow suit. This is in line with research of Sorlie and Torsheim (2011) who found that teachers reported less problems in their classroom when there was a relatively high collective efficacy among the teachers in the school. Waitoller and Kozlowski (2013, p.44) also state that we are in need of: “(...) people engaged in ongoing efforts to collaborate across professional expertise to foreground inclusive education in teacher preparation programs”.

6.5 Limitations and Recommendations

A limitation of this study is that the sample included only 10 inclusive schools from only one geographical area in Tanzania (100 teachers from two municipalities). Further study using a larger sample of schools from different Tanzanian regions would be recommended. Next to that, research including the perception of pupils with and without disabilities would be of interest to get a more in-depth insight in what is best for a successful implementation of inclusive education in the Tanzanian context (see also Koster et al., 2010).

Next to quantitative survey research, it could be valuable to focus on qualitative methods that might be appropriate in enhancing the understanding of self-efficacy and its relationship to inclusion of students with disabilities.

Our study suggests that, comparative studies especially between developed and developing countries to compare teachers' self-efficacy, attitudes and problems faced by teachers in the implementation of inclusive education, can be of support to develop a more specific view about what is necessary for successful implementation of inclusive education. Studies and comparisons like these could help countries to discover what mistakes are made in earlier policies and how those can be avoided to improve the implementation of inclusive education in specific contexts.

Furthermore, many of our teachers experienced a lot of problems while including pupils with different disabilities in their classroom. Studies investigating influences of special education training background on teachers' attitudes towards inclusion demonstrated that, level of

training is an important factor in the formation of more positive teachers' attitudes towards inclusion (Avramidis & Norwich 2002; Bornman & Donohue, 2013; de Boer et al, 2011). General teacher preparation programs have a largely unrealized potential to contribute to improving teachers capacity to implement inclusive education (Sanger & Osguthorpe, 2011). Therefore, also according Bornman and Donohue (2013) providing regular education teachers with additional training, expertise and skill in inclusive education would clearly ease some of the tension.

Our study showed that only 1% of our teachers in Tanzanian inclusive education in the Dar es Salam region hold a diploma and only 9% a certificate regarding special needs education. Therefore this study suggests that the ministry of education and vocational training of Tanzania and other education stakeholders must consider the importance of inclusive education by providing fitting pre-service and in-service training for teachers, providing necessary specific materials for teaching and learning in inclusive classrooms and renovate the school environment to tackle the needs of all pupils including those with disabilities. Teachers in inclusive schools need preparation and workshops that will make them become more used to work with children with disabilities in their classroom. The preparation must focus on what *teachers* want to and need to know regarding the organisation of a classroom in order to give students individual attention, how to monitor progress, organize special materials and how to work successfully with other teachers and adults in an inclusive setting.

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